

 **國立東華大學**  
**教學計劃表 Syllabus**

|                                                                                                                   |                                              |                             |    |                                    |           |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------|----|------------------------------------|-----------|
| 課程名稱(中文)<br>Course Name in Chinese                                                                                | 海洋無脊椎動物特論                                    |                             |    | 學年/學期<br>Academic Year/Semester    | 114/2     |
| 課程名稱(英文)<br>Course Name in English                                                                                | Advanced Marine Invertebrate Zoology         |                             |    |                                    |           |
| 科目代碼<br>Course Code                                                                                               | IMB_71200                                    | 系級<br>Department & Year     | 博士 | 開課單位<br>Course-Offering Department | 海洋生物研究所   |
| 修別<br>Type                                                                                                        | 選修 Elective                                  | 學分數/時間<br>Credit(s)/Hour(s) |    | 3.0/3.0                            |           |
| 授課教師<br>Instructor                                                                                                | /劉弼仁                                         |                             |    |                                    |           |
| 先修課程<br>Prerequisite                                                                                              |                                              |                             |    |                                    |           |
| 課程描述 Course Description                                                                                           |                                              |                             |    |                                    |           |
| 介紹海洋無脊椎動物，由老師每週介紹，增進學生對特定海洋無脊椎生物的瞭解；並選擇特定主題有關海洋無脊椎研究的國際學術論文、由學生和老師進行研讀和討論，瞭解最新的無脊椎動物的研究；進一步從論文中學習發現問題和解決問題的方式的練習。 |                                              |                             |    |                                    |           |
| 課程目標 Course Objectives                                                                                            |                                              |                             |    |                                    |           |
| 增進學生對海洋無脊椎動物的瞭解、並透過最新的學術報告的研讀和討論，瞭解對特定海洋無脊椎生物，並從論文中學習發現問題和解決問題的方式。                                                |                                              |                             |    |                                    |           |
| 圖示說明Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated                                            |                                              |                             |    |                                    |           |
| 授課進度表 Teaching Schedule & Content                                                                                 |                                              |                             |    |                                    |           |
| 週次Week                                                                                                            | 內容 Subject/Topics                            |                             |    |                                    | 備註Remarks |
| 1                                                                                                                 | Invertebrate classification and relationship |                             |    |                                    |           |
| 2                                                                                                                 | The Protists                                 |                             |    |                                    |           |
| 3                                                                                                                 | The proiferans and Placozoans                |                             |    |                                    |           |
| 4                                                                                                                 | 主題討論1                                        |                             |    |                                    |           |
| 5                                                                                                                 | The Cnidarians                               |                             |    |                                    |           |
| 6                                                                                                                 | 主題討論2                                        |                             |    |                                    |           |
| 7                                                                                                                 | The Ctenophores, Rotifers, Nemertines        |                             |    |                                    |           |
| 8                                                                                                                 | The Molluscs                                 |                             |    |                                    |           |
| 9                                                                                                                 | 期中考試週 Midterm Exam - 主題討論3                   |                             |    |                                    |           |
| 10                                                                                                                | The Annelids                                 |                             |    |                                    |           |
| 11                                                                                                                | 主題討論4                                        |                             |    |                                    |           |
| 12                                                                                                                | The Arthropods                               |                             |    |                                    |           |
| 13                                                                                                                | 主題討論5                                        |                             |    |                                    |           |
| 14                                                                                                                | The Nematodes and others                     |                             |    |                                    |           |
| 15                                                                                                                | 主題討論6                                        |                             |    |                                    |           |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--|
| 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | The Echinoderms                               |  |
| 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | The invertebrate reproduction and development |  |
| 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 期末考試週 Final Exam - 主題討論7                      |  |
| 教 學 策 略 Teaching Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               |  |
| <input checked="" type="checkbox"/> 課堂講授 Lecture <input checked="" type="checkbox"/> 分組討論Group Discussion <input checked="" type="checkbox"/> 參觀實習 Field Trip<br><input type="checkbox"/> 其他Miscellaneous:                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                               |  |
| 教 學 創 新 自 評 Teaching Self-Evaluation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                               |  |
| 創新教學(Innovative Teaching)<br><input type="checkbox"/> 問題導向學習(PBL) <input type="checkbox"/> 團體合作學習(TBL) <input type="checkbox"/> 解決導向學習(SBL)<br><input type="checkbox"/> 翻轉教室 Flipped Classroom <input type="checkbox"/> 磨課師 Moocs<br>社會責任(Social Responsibility)<br><input type="checkbox"/> 在地實踐Community Practice <input type="checkbox"/> 產學合作 Indusy-Academia Cooperation<br>跨域合作(Transdisciplinary Projects)<br><input type="checkbox"/> 跨界教學Transdisciplinary Teaching <input type="checkbox"/> 跨院系教學Inter-collegiate Teaching<br><input type="checkbox"/> 業師合授 Courses Co-taught with Industry Practitioners<br><br>其它 other: <hr/> |                                               |  |

| 學期成績計算及多元評量方式 Grading & Assessments                                                                                                                   |                    |                    |          |          |          |          |          |          |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|----------|----------|----------|----------|----------|----------|----|
| 配分項目<br>Items                                                                                                                                         | 配分比例<br>Percentage | 多元評量方式 Assessments |          |          |          |          |          |          |    |
|                                                                                                                                                       |                    | 測驗<br>會考           | 實作<br>觀察 | 口頭<br>發表 | 專題<br>研究 | 創作<br>展演 | 卷宗<br>評量 | 證照<br>檢定 | 其他 |
| 平時成績(含出缺席)<br>General Performance<br>(Attendance Record)                                                                                              | 60%                |                    | ✓        | ✓        | ✓        |          |          |          |    |
| 期中考成績 Midterm Exam                                                                                                                                    |                    |                    |          |          |          |          |          |          |    |
| 期末考成績 Final Exam                                                                                                                                      |                    |                    |          |          |          |          |          |          |    |
| 作業成績 Homework and/or<br>Assignments                                                                                                                   | 40%                |                    | ✓        | ✓        | ✓        |          |          |          |    |
| 其他 Miscellaneous<br>(_____)                                                                                                                           |                    |                    |          |          |          |          |          |          |    |
| 評量方式補充說明<br>Grading & Assessments Supplemental instructions                                                                                           |                    |                    |          |          |          |          |          |          |    |
|                                                                                                                                                       |                    |                    |          |          |          |          |          |          |    |
| 教科書與參考書目(書名、作者、書局、代理商、說明)<br>Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)                                            |                    |                    |          |          |          |          |          |          |    |
| Biology of the invertebrates, Jan A. Pechenik, McGraw-Hill Higher Educatio                                                                            |                    |                    |          |          |          |          |          |          |    |
| 課程教材網址(含線上教學資訊,教師個人網址請列位於本校內之網址)<br>Teaching Aids & Teacher's Website(Including online teaching information.<br>Personal website can be listed here.) |                    |                    |          |          |          |          |          |          |    |
|                                                                                                                                                       |                    |                    |          |          |          |          |          |          |    |
| 其他補充說明 (Supplemental instructions)                                                                                                                    |                    |                    |          |          |          |          |          |          |    |
|                                                                                                                                                       |                    |                    |          |          |          |          |          |          |    |